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SCIENCE

FRIDAY, NOVEMBER 2, 1888.

THE *Independent* for Oct. 25 has an interesting article by President Gilman on 'The Future of the Johns Hopkins University.' It is the settled purpose of that institution, for the future as in the past, to maintain a collegiate or undergraduate course of study, and also a system of university or post-graduate courses. The college students come mostly from Maryland. The post-graduate students are from all parts of the country, but President Gilman thinks that in the future they will come more and more largely from the South. The university is now in most departments very well organized, but two professorships of great importance—philosophy and English—are still unfilled. Professor Hall, who was to have been the head of the philosophical department, has been called to the presidency of another institution, and his place has not yet been supplied. The search for a professor of English literature, too, has not yet been successful; for the authorities of the university want a man like Matthew Arnold or James Russell Lowell, and such men are not easy to get. Strenuous efforts are making, however, to fill both these positions, and every one will hope that the right men may be found. Mr. Hopkins, as is well known, left a large sum to found a hospital, with the intention that the university should establish a medical school in connection therewith. The hospital buildings are now completed, and the university has already established three professorships as the beginning of a medical department. "The only cause for anxiety in the future of the Johns Hopkins University," says President Gilman, "is the suspension of dividends by the Baltimore and Ohio Railroad. The founder gave the university fifteen thousand shares of the common stock of the railroad, and he recommended the trustees in the most explicit terms to keep, protect, and defend this investment." The income from this stock has been about \$150,000 a year, and has been the main support of the university; and, now that it has ceased for a time, there is little to sustain the institution except the tuition-fees and the moderate surplus that has been accumulated in past years. President Gilman suggests that the friends of the university should make up an emergency fund to relieve its present needs, and expresses confidence that such an institution as the Johns Hopkins University "will not long be allowed to suffer for the want of an income." This confidence we believe to be justified; and certainly every lover of learning will hope that a university of so much promise may suffer no check in its useful career.

THE THOROUGHNESS with which statistics are collected under the direction of Col. Carroll D. Wright by the Labor Bureau at Washington is well illustrated in the gathering of the facts in regard to marriage and divorce in the United States, that are to be embodied in a special report that will be ready early in January. The special agents engaged in this work have obtained the figures from every court in the country having divorce jurisdiction. When it is stated that there are more than twenty-seven hundred of these courts, and that the period of investigation extends over the ten years from 1876 to 1886, the magnitude of the work may be imagined. The report in each case will give the ages of the persons divorced, the cause for which the separation was granted, state whether the husband or wife obtained the decree, the number of children, the place of marriage, and the migration of the couple since then. This latter inquiry is made in order to show whether the change of residence was *bona fide*, or merely for the purpose of obtaining a divorce. Statistics showing the length of time the

marriage lasted, and other facts that may tend to throw light on the subject, have also been collected. The number of marriages will be given by counties for the same period, so that the ratio of divorces to marriages may be seen. There will be added a synopsis of the divorce laws of every State, and the statistics of divorces in the principal countries of Europe. No such investigation for original information has ever been made in any country, and there is none in which it could be made. If it were possible for such a force of experts to be organized elsewhere as Colonel Wright commands the services of to make the inquiries, prejudice, red tape, and respect for established institutions, would prevent them from obtaining the information they sought. Americans have reason to feel proud when they remember that nowhere upon the globe is there an organization, public or private, so well equipped for the collection of social statistics as the United States Labor Bureau.

AT LENGTH THERE IS PROSPECT of the speedy erection of a building for the Congressional Library,—for this we suppose we all ought to be truly thankful, in view of the narrow-minded way in which Congress treated the subject at the late session,—but we fear that the edifice will not be one upon which we shall have occasion to waste much pride. This is no reflection upon General Casey, who is hereafter to have full charge of the work, for we believe that he will make the best building possible with the funds at his disposal. The foundations of the building have already been built in accordance with a plan that contemplated a structure ultimately to cost ten or twelve million dollars. The cost of this work and of the necessary excavations has been several hundred thousand dollars, probably more than half a million. Economy requires the utilization of this work, and General Casey has therefore wisely concluded that the plan of the building he will erect shall be substantially the same as that before contemplated, but that he will so manage it by saving upon the cost of material, on ornamentation, etc., as to keep his expenditures within the four million which Congress has appropriated, and to which it has absolutely limited the cost. It is rare that a public building does not cost from twenty-five to fifty per cent *more* than is estimated: to erect a building for seventy-five per cent *less* than the estimated cost will be a task that no one will envy General Casey. And yet there will be a building of some sort completed much sooner than there has been any reason to anticipate. It will afford accommodation to the books and other literary and art treasures now in the Congressional Library, and for those that will accumulate for a few years to come. By the time it is full, there may be in Washington some Congress that can appreciate the value of a great library, and that will be broad-minded and patriotic enough to provide a building suitable for its accommodation, and of such style of architecture that it will not cause an American citizen to blush when he contemplates it.

CENTENARIANS IN FRANCE.¹

M. LEVASSEUR has recently published the result of an inquiry into the number and condition of those who had reached the age of one hundred years, which gives interesting information regarding the extreme limits of human existence, and the proportion of men that attain it. The newspaper account of centenarians frequently ascribing an age of anywhere from one hundred and ten to one hundred and thirty years, and emphasizing details showing remarkable preservation of faculty, is of course utterly unreliable. A slight investigation is often sufficient to show the groundlessness of such pretensions. In 1871, of 37 reported centenarians in Bavaria,

¹ See an article by M. V. Turquan, *Revue Scientifique*, Sept. 1, 1888.

not one was found really one hundred years old. In Canada the census at the same time showed 421 centenarians. Of these, only 82 could prove their citizenship, and of these only 9 were really one hundred years old, while it was probable that a still smaller proportion of the others were genuine centenarians. The 1886 census of France records 184 centenarians,—66 men and 118 women. This number, though not in excess of the usual record, has aroused suspicion, and led to further inquiry.

The reasons for falsification are quite evident. A peculiar and innocent kind of pride; ignorance of their real age; the assurance of being very, very old,—all these, in passing from mouth to mouth, become cases of advanced centenarianism. Upon closer inquiry, of these 184, only 83 stood the slightest investigation; of the remaining 101, many were really very old, but not one hundred years old; and three young persons gave in their answers as a joke. A reference to the birth register showed that 49 of the alleged centenarians were really of the following ages: 1 of 77, 2 of 78, 1 of 79, 1 of 80, 1 of 82, 1 of 86, 1 of 89, 4 of 90, 4 of 91, 6 of 92, 1 of 93, 4 of 94, 6 of 95, 5 of 96, 2 of 97, 2 of 98, and 7 of 99. Of the rest, no reliable information was obtainable.

Of the 83, only 16 showed their baptismal records to the authorities at Paris; the other 67 did not send their records of baptism to Paris (in some cases these were seen at their houses), but produced the less satisfactory evidence of a marriage certificate, etc. Of these 83 (containing an uncertain number of fraudulent cases, no doubt), 31 were men and 52 women. Of the men, 6 had never married, 2 were married, and 23 widowers: corresponding numbers for the women were 10, 1, and 41. Again: 44 were just 100 years old, 16 were 101, 7 were 102, 6 were 103, 5 were 104, 3 were 105, and 1 claimed to be 112 and another 116 years old, yielding an average age of 101 years and 4 months. The veteran of 116 years is reported to be in good health in June last at 118 years. But dismissing this as well as the preceding case, 105 may be regarded as the extreme limit of life in France.¹

The profession of 59 of the 83 was ascertainable: 22 were farmers and laborers, 9 were handicraftsmen, 8 were land-holders, 6 were cooks or domestics, 5 were merchants, 2 were shepherds, and of the other 7, 1 was a teacher, 1 an insurance-agent, 1 a hotel-keeper, 1 a midwife, 1 a widow of a costumer, 1 a widow of a doctor, and 1 a widow of a stone-cutter. They can also be classified as follows: those living in actual poverty, 22; of very limited means, 10; of a modest fortune, 7; in easy circumstances, 6; wealthy, 1; present fortune unknown, but quite limited in means (as can be deduced from their former professions), 37. The fact that so large a proportion of centenarians come from the poorer and the hard-working classes is a striking one, and is borne out by the statistics of other countries. Their habits of life, too, when such information is obtainable, point to a simple, wholesome diet, much outdoor activity, and little care.

Another means of gauging the number of centenarians is by the number of annual deaths of persons of 100 years or more. In the twenty years from 1866 to 1886 the deaths of 1,474 such persons are reported (553 men and 921 women), or about 73 such deaths annually (27 men, 46 women). This justifies the conclusion that about 70 centenarians for France is a liberal if not a maximum estimate, and the every-day reports are greatly exaggerated. The average annual death-rate of centenarians for the years 1855 to 1885 is 87, or 1 to about 15,000 of the population,—a doubtlessly greatly exaggerated account.

A topic of interest to French but hardly to American readers, is the local distribution of the centenarians in the different departments of France. The southern portion, and especially the region bordering upon the Pyrenees, is particularly fruitful of centenarians.

While these statistics serve to correct popular estimates, they are themselves not rigid enough to be accepted as they stand. Many suspicious points still occur: the preponderance of women over men is too great to be capable of a biological explanation; the preponderance of the working-classes may be a sign of ignorance or of mendacity as well as of longevity; and so on. At any rate, the general conclusion seems warranted that there are really very few centenarians to a million souls.

¹ One of these patriarchs stands at the head of five generations, and counts ninety-five children and grandchildren; another has seventy direct descendants.

THE TOPOGRAPHIC MAP OF NEW JERSEY.

MENTION has been made in *Science* from time to time of the topographic maps of different parts of the country, and in particular of the numerous sheets that constitute the 'Atlas of New Jersey.' The seventeen sheets, on a scale of a mile to an inch, and with contours every ten or twenty feet, covering the whole State, have all been issued, and are now followed by two general maps of the State on a scale of five miles to an inch. The first of these gives counties, townships, cities, villages, railroads, and many of the roads, but gives no indication of the topographic relief. The second has the railroads and a small number of towns, and indicates the topography with great nicety by a series of tints of increasing darkness with increasing height. Thus for the first time in this country is the form of one of our States duly portrayed.

The map is a picture that the geographer may lean over for hours with increasing interest. The features of the State are brought out with perfect distinctness. The broad plains of the southern half, where the railroads run along the flat divides between the streams, is shown in the strongest contrast with the rugged highlands of the northern half, where the valleys alone afford highways. The curiously curved ridges formed by the trap sheets of the triassic area appear with their well-marked individuality. The faintly submerged valleys of all the salt-water coast-line are distinctly revealed by the estuary-like form of the lower stream-courses; and all this not merely in outline, as it appears on ordinary maps, but with accurately determined contours, giving the quantity as well as the quality of the form of the State. Besides this, the map is very suggestive in the way of displaying hitherto unsuspected problems, whose very quantities were unknown before. Now they take definite shape, and call for solution. Look, for example, in the southern half of the State, at the general line of divides between the streams flowing into the Atlantic and those flowing into the Delaware, and note not only the great bend, but also the diminution in height of the line at the head of the Rancocas: has this not some connection with the bend of the Delaware from its direct course at Bordentown? See the oblique truncation of Sourland Mountain on a line, that, when extended, leads to the similarly oblique truncation of the Watchung Ridges: is there not some great dislocation responsible for this coincidence? Notice the heavy morainic barrier that bisects the Passaic basin within the Watchung Ridges: the present line of escape for the Passaic from the Great Swamp that lies outside of the moraine must have been adopted since the glacial period. It is only when the relief of the ground is given quantitatively, as by contours, that problems such as these can be discussed satisfactorily: hence the great advance that geography may count upon when accurate contoured and shaded maps are published for other States.

This map of New Jersey recalls a similar one of Scotland, prepared by Bartholomew, with explanatory text by James Geikie, and published in the first number of the *Scottish Geographical Magazine* a few years ago. Professor Geikie did good service to geography in calling attention to the absolute need of good maps, showing the real form of the country that one has to study; and we would gladly repeat and emphasize every word that he says as to their educational value. But there is another curious correspondence between the two cases: Geikie's physical description of the Scottish highlands and lowlands applies with extraordinary accuracy to the northern third of New Jersey. In both, the highlands are distorted and ancient hard rocks, which have been heavily eroded, and whose general upland surface is an old lowland, elevated, and now deeply consumed by valley-making streams. Both highlands are separated from the lowlands that lie south-east of them by a great fracture, with up and down throw on corresponding sides. Both lowlands owe their present moderate elevation not so much to any depression that they have suffered as to the broad wasting-away of their relatively soft rocks; while the hard crystallines of the highlands have wasted more slowly, and still retain much of the height that the lowlands have lost. The ridges that rise above the lowlands, both in Scotland and New Jersey, are beds of volcanic rock that have, like the highlands, wasted slowly, so as to stand up in strong relief above the softer rocks on either side. There are, of course, differences in plenty